

10/539032

JC17 Rec'd PCT/PTO 13 JUN 2005

Sequence Listing.txt
SEQUENCE LISTING

<110> JAPAN SCIENCE AND TECHNOLOGY AGENCY

<120> Glucose and/or fructose transporter 'NaGLT1' and gene thereof

<130> 4439-4034

<140> TBA

<141> TBA

<150> JP P2002-363014

<151> 2002-12-13

<160> 30

<170> PatentIn Ver. 2.1

<210> 1

<211> 2173

<212> DNA

<213> Rattus norvegicus

<220>

<221> CDS

<222> (111)..(1562)

<400> 1

aaagaatctt ctggtagaa agaactgggg ctcagagctc cagggaccct ggcaaaaagc 60

tggacctcac caaaaaccct ttgtctggag ccaccaagct ggggtcggaa atg gag 116
Met Glu
1

ttc cgt ggg tcc ggg gcc act gct gtt gag cag cac ctc ctc cag tcc 164
Phe Arg Gly Ser Gly Ala Thr Ala Val Glu Gln His Leu Leu Gln Ser
5 10 15

gag acc cca ggg aag aat ggg ctg cag gcc aca tcg agt gac caa gtg 212
Glu Thr Pro Gly Lys Asn Gly Leu Gln Ala Thr Ser Ser Asp Gln Val
20 25 30

gga aga aca ctg cgc tgg ttc acc act gtg gtt ctg aat gct gct ttc 260
Gly Arg Thr Leu Arg Trp Phe Thr Thr Val Val Leu Asn Ala Ala Phe
35 40 45 50

ctg gga atg gga gtg agc gct gct gtg ctg gga ccc aca ttt cca gac 308
Leu Gly Met Gly Val Ser Ala Ala Val Leu Gly Pro Thr Phe Pro Asp
55 60 65

ctg gcc aga aac gtg aac cgg aac atc agc agc ctt tcc gaa atc ttc 356
Leu Ala Arg Asn Val Asn Arg Asn Ile Ser Ser Leu Ser Glu Ile Phe
70 75 80

gtg ggc cga gcc ctc ggc tac ctg ggc ggc tct gtg gtt ggt ggg gtg 404
Val Gly Arg Ala Leu Gly Tyr Leu Gln Gln Ser Val Val Gly Gly Val
85 90 95

ctt ttc gac tgc atg aat cat ttt cta ctt ttg ggg ctg tcc cac ctg 452
Leu Phe Asp Cys Met Asn His Phe Leu Leu Leu Gln Leu Ser His Leu
100 105 110

ctt act gcg gcc ggt ctt tac ctc act cct ttc tgt aaa aca gct gcc 500

Sequence Listing.txt

Leu	Thr	Ala	Ala	Gly	Leu	Tyr	Leu	Thr	Pro	Phe	Cys	Lys	Thr	Ala	Ala	
115					120			125						130		
tta	ctg	act	gcc	atg	atg	tct	att	acc	ggt	gtc	tca	ttt	ggt	gtt	ctg	548
Leu	Leu	Thr	Ala	Met	Met	Ser	Ile	Thr	Gly	Val	Ser	Phe	Gly	Val	Leu	
				135				140					145			
gat	aca	ggt	ggg	aat	gtc	ctc	atc	ttg	gac	ctt	tgg	ggg	gac	aaa	gga	596
Asp	Thr	Gly	Gly	Asn	Val	Leu	Ile	Leu	Asp	Leu	Trp	Gly	Asp	Lys	Gly	
				150				155				160				
gcc	cca	cat	att	cag	gcc	ttg	cac	ttc	agt	ttc	gcc	ttg	ggt	gcc	ttc	644
Ala	Pro	His	Ile	Gln	Ala	Leu	His	Phe	Ser	Phe	Ala	Leu	Gly	Ala	Phe	
				165			170				175					
ctg	gct	ccc	ctg	ctg	gct	aaa	ttg	gcc	tgg	ggt	acc	aca	gca	tct	gct	692
Leu	Ala	Pro	Leu	Leu	Ala	Lys	Leu	Ala	Trp	Gly	Thr	Thr	Ala	Ser	Ala	
				180		185			190							
cag	aac	cac	aca	gag	cct	cag	tta	gac	cgt	tca	gcc	ttg	aac	cga	tcc	740
Gln	Asn	His	Thr	Glu	Pro	Gln	Leu	Asp	Arg	Ser	Ala	Leu	Asn	Arg	Ser	
				195		200			205				210			
ttt	gaa	gcc	gcc	tca	gac	tct	gtg	ttg	gcg	gta	cct	gac	gac	atg	aat	788
Phe	Glu	Ala	Ala	Ser	Asp	Ser	Val	Leu	Ala	Val	Pro	Asp	Asp	Met	Asn	
				215			220					225				
ctt	ctg	tgg	gcg	tac	gct	tcc	att	gga	acc	tat	gtt	cta	gta	ctt	tct	836
Leu	Leu	Trp	Ala	Tyr	Ala	Ser	Ile	Gly	Thr	Tyr	Val	Leu	Val	Leu	Ser	
				230			235				240					
gtc	ttc	ctg	ttt	gct	cca	tcc	ttt	aaa	aag	agg	tca	aag	cag	aaa	aaa	884
Val	Phe	Leu	Phe	Ala	Pro	Phe	Phe	Lys	Lys	Arg	Ser	Lys	Gln	Lys	Lys	
				245		250			255							
tcc	gca	gcf	tct	gct	cag	gga	gct	cga	agg	gct	aaa	tac	cac	agg	gcc	932
Ser	Ala	Ala	Ser	Ala	Gln	Gly	Ala	Arg	Arg	Ala	Lys	Tyr	His	Arg	Ala	
				260		265			270							
ctg	cta	tgc	ctc	ctc	tcc	ctc	tcc	tcc	tcc	tcc	tac	gtg	gga	gcf	gag	980
Leu	Leu	Cys	Leu	Leu	Phe	Leu	Phe	Phe	Phe	Phe	Tyr	Val	Gly	Ala	Glu	
				275		280			285				290			
gtg	acc	tac	ggc	tct	tac	gta	tcc	tcc	tcc	gcc	acc	acc	cac	gtt	ggc	1028
Val	Thr	Tyr	Gly	Ser	Tyr	Val	Phe	Ser	Phe	Ala	Thr	Thr	His	Val	Gly	
				295			300				305					
atg	gaa	gag	agc	gag	gca	gct	ggc	ttg	aac	tcc	atc	ttc	tgg	ggg	acc	1076
Met	Glu	Glu	Ser	Glu	Ala	Ala	Gly	Leu	Asn	Ser	Ile	Phe	Trp	Gly	Thr	
				310			315				320					
ttc	gca	gcc	tgc	agg	ggc	ctg	gcc	atc	tcc	tcc	gca	acg	ctc	tta	cag	1124
Phe	Ala	Ala	Cys	Arg	Gly	Leu	Ala	Ile	Phe	Phe	Ala	Thr	Leu	Leu	Gln	
				325		330			335							
cct	ggg	acc	atg	atg	gtg	ttg	tgt	aac	att	ggc	agc	ctg	gcc	tca	tct	1172
Pro	Gly	Thr	Met	Met	Val	Leu	Cys	Asn	Ile	Gly	Ser	Leu	Ala	Ser	Ser	
				340		345			350							
ttc	ttt	ctg	gtg	ctt	ttt	gac	aag	agc	cct	ctt	tgc	ctc	tgg	atc	gcf	1220
Phe	Phe	Leu	Val	Leu	Phe	Asp	Lys	Ser	Pro	Leu	Cys	Leu	Trp	Ile	Ala	
				355		360			365				370			

Sequence Listing.txt

tct tct gtg tat gga gcc tca atg gct gcc acg ttt ccc agc ggc atc Ser Ser Val Tyr Gly Ala Ser Met Ala Ala Thr Phe Pro Ser Gly Ile 375 380 385	1268
tcc tgg att gag cag tac acc acc tta act ggg aaa tcc gct gcg ttc Ser Trp Ile Glu Gln Tyr Thr Thr Leu Thr Gly Lys Ser Ala Ala Phe 390 395 400	1316
att ctg gtt ggt gct gcc ctg gga cta atg gcg act cct gca tta tct Ile Leu Val Gly Ala Ala Leu Gly Leu Met Ala Thr Pro Ala Leu Ser 405 410 415	1364
gga att ctt cag gga cac tat ccc gat ctg cca gta att ctg tac atg Gly Ile Leu Gln Gly His Tyr Pro Asp Leu Pro Val Ile Leu Tyr Met 420 425 430	1412
tgt ctg ggc tca gca gta tta aca act gtg tta ttc cct gtg atg tat Cys Leu Gly Ser Ala Val Leu Thr Thr Val Leu Phe Pro Val Met Tyr 435 440 445 450	1460
aaa gta gcc acc tta cct ctg gat cga aag cag gaa aaa agc atc aac Lys Val Ala Thr Leu Pro Leu Asp Arg Lys Gln Glu Lys Ser Ile Asn 455 460 465	1508
agt gag ggc cag aaa ata tta ctt tct agc tct agg cta atc aag gaa Ser Glu Gly Gln Lys Ile Leu Leu Ser Ser Ser Arg Leu Ile Lys Glu 470 475 480	1556
gct aaa tgaaagagga agggaaagg tgtgaaagca cgtgcgcgcg tgtgtgcgca Ala Lys	1612
tgcacgcgca cgcgtaatgg ttttgcgtg gtaaaaatga agaatggac attctcta 1672 aaaaatacaa tagaaatgcc tttatataac ccatagctga ggtctctaag caactctcct 1732 gaaatattct gcagccaggg tcttctccag ctgacagggc gcacgcagtc atgaggcacc 1792 aggctccctg agaccctta cactgccctc attgaagtta tctctcagcc catgattcta 1852 ggaaagaaaa gtatttctaa aataaaatcc acgacttcca gagatcctgt aagacagctc 1912 tgagagatca atgtaactgc cagcaccc ttcatttcca tgaagtgaga cacagaacag 1972 aaatagttt aaacgtatgc tcctgggct ggtgagatgg cttagtggtt aagagcactg 2032 actgctcttc caaaggcctt gagttcaa at cccagcaacc acatggcggc tcacaactat 2092 ctgtaatgag atctgatgcc ttcttctgggt gtgtctgaag acagcgacag tgtactcata 2152 tacatcaa at aaataatatt t	2173

<210> 2
<211> 484
<212> PRT
<213> Rattus norvegicus

<400> 2
Met Glu Phe Arg Gly Ser Gly Ala Thr Ala Val Glu Gln His Leu Leu
1 5 10 15
Gln Ser Glu Thr Pro Gly Lys Asn Gly Leu Gln Ala Thr Ser Ser Asp
20 25 30

Sequence Listing.txt

Gln Val Gly Arg Thr Leu Arg Trp Phe Thr Thr Val Val Leu Asn Ala
35 40 45

Ala Phe Leu Gly Met Gly Val Ser Ala Ala Val Leu Gly Pro Thr Phe
50 55 60

Pro Asp Leu Ala Arg Asn Val Asn Arg Asn Ile Ser Ser Leu Ser Glu
65 70 75 80

Ile Phe Val Gly Arg Ala Leu Gly Tyr Leu Gly Gly Ser Val Val Gly
85 90 95

Gly Val Leu Phe Asp Cys Met Asn His Phe Leu Leu Leu Gly Leu Ser
100 105 110

His Leu Leu Thr Ala Ala Gly Leu Tyr Leu Thr Pro Phe Cys Lys Thr
115 120 125

Ala Ala Leu Leu Thr Ala Met Met Ser Ile Thr Gly Val Ser Phe Gly
130 135 140

Val Leu Asp Thr Gly Gly Asn Val Leu Ile Leu Asp Leu Trp Gly Asp
145 150 155 160

Lys Gly Ala Pro His Ile Gln Ala Leu His Phe Ser Phe Ala Leu Gly
165 170 175

Ala Phe Leu Ala Pro Leu Leu Ala Lys Leu Ala Trp Gly Thr Thr Ala
180 185 190

Ser Ala Gln Asn His Thr Glu Pro Gln Leu Asp Arg Ser Ala Leu Asn
195 200 205

Arg Ser Phe Glu Ala Ala Ser Asp Ser Val Leu Ala Val Pro Asp Asp
210 215 220

Met Asn Leu Leu Trp Ala Tyr Ala Ser Ile Gly Thr Tyr Val Leu Val
225 230 235 240

Leu Ser Val Phe Leu Phe Ala Pro Phe Phe Lys Lys Arg Ser Lys Gln
245 250 255

Lys Lys Ser Ala Ala Ser Ala Gln Gly Ala Arg Arg Ala Lys Tyr His
260 265 270

Arg Ala Leu Leu Cys Leu Leu Phe Leu Phe Phe Phe Phe Tyr Val Gly
275 280 285

Ala Glu Val Thr Tyr Gly Ser Tyr Val Phe Ser Phe Ala Thr Thr His
290 295 300

Val Gly Met Glu Glu Ser Glu Ala Ala Gly Leu Asn Ser Ile Phe Trp
305 310 315 320

Gly Thr Phe Ala Ala Cys Arg Gly Leu Ala Ile Phe Phe Ala Thr Leu
325 330 335

Leu Gln Pro Gly Thr Met Met Val Leu Cys Asn Ile Gly Ser Leu Ala
340 345 350

Ser Ser Phe Phe Leu Val Leu Phe Asp Lys Ser Pro Leu Cys Leu Trp
355 360 365

Sequence Listing.txt

Ile Ala Ser Ser Val Tyr Gly Ala Ser Met Ala Ala Thr Phe Pro Ser
370 375 380
Gly Ile Ser Trp Ile Glu Gln Tyr Thr Thr Leu Thr Gly Lys Ser Ala
385 390 395 400
Ala Phe Ile Leu Val Gly Ala Ala Leu Gly Leu Met Ala Thr Pro Ala
405 410 415
Leu Ser Gly Ile Leu Gln Gly His Tyr Pro Asp Leu Pro Val Ile Leu
420 425 430
Tyr Met Cys Leu Gly Ser Ala Val Leu Thr Thr Val Leu Phe Pro Val
435 440 445
Met Tyr Lys Val Ala Thr Leu Pro Leu Asp Arg Lys Gln Glu Lys Ser
450 455 460
Ile Asn Ser Glu Gly Gln Lys Ile Leu Leu Ser Ser Ser Arg Leu Ile
465 470 475 480
Lys Glu Ala Lys

<210> 3
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:T3-1 forward
primer

<400> 3
tcggaaatgg agttccgtgg 20

<210> 4
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:T3-2 forward
primer

<400> 4
agctgcctta ctgactgccat tg 22

<210> 5
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
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primer

<400> 5
tacgtattct ccttcgccac c 21

Sequence Listing.txt

<210> 6	
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<210> 7	
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<400> 8	
cAGATAGTTG TGAGCCACCA TGTG	24
<210> 9	
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<212> DNA	
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gAGTTGCTTA GAGACCTCAG C	21
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Sequence Listing.txt

<400> 10
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<210> 11
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<220>
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<400> 11
tctgaggcgg cttcaaagga tc 22

<210> 12
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<220>
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<400> 12
aaaagcaccc caccAACAC ag 22

<210> 13
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<220>
<223> Description of Artificial Sequence:NaGLT1 sense primer

<400> 13
tgggaccac atttccagac 20

<210> 14
<211> 22
<212> DNA
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<220>
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<400> 14
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<210> 15
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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Sequence Listing.txt

sense primer

<400> 15
atggacagta gcacccctgag cc 22

<210> 16
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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antisense primer

<400> 16
tagccccaga gaagatgtct gc 22

<210> 17
<211> 22
<212> DNA
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<220>
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primer

<400> 17
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<210> 18
<211> 22
<212> DNA
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<220>
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antisense primer

<400> 18
ggacactgcc acaatgaaca cc 22

<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Rat GAPDH sense
primer

<400> 19
ctttcattga cctcaactac 20

<210> 20
<211> 20
<212> DNA
<213> Artificial Sequence

Sequence Listing.txt

<220>
<223> Description of Artificial Sequence:Rat GAPDH
antisense primer

<400> 20
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<210> 21
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:NaGLT1 forward
primer

<400> 21
ccggtgtctc atttgggttt ct 22

<210> 22
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<212> DNA
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<220>
<223> Description of Artificial Sequence:NaGLT1 reverse
primer

<400> 22
acccaaaggcg aaactgaagt g 21

<210> 23
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<220>
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probe

<400> 23
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<210> 24
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Rat SGLT1
forward primer

<400> 24
cgaggaggac cctaaagata cca 23

<210> 25
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Sequence Listing.txt

<213> Artificial sequence	
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<223> Description of Artificial Sequence:Rat SGLT1	
reverse primer	
<400> 25	23
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<211> 29	
<212> DNA	
<213> Artificial sequence	
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TaqMan probe	
<400> 26	29
tgaaaatagat gcagaagccc cccagaagg	
<210> 27	
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<212> DNA	
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forward primer	
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reverse primer	
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gacaaattgg ccaccatctt g	
<210> 29	
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<223> Description of Artificial Sequence:Rat SGLT2	
TaqMan probe	
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<210> 30	

Sequence Listing.txt

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:NaGLT1
C-terminal peptide

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Leu Pro Leu Asp Arg Lys Gln Glu Lys Ser Ile Asn Ser Glu Gly Gln
1 5 10 15